six-phosphate dehydrogenase deficiency. For alternate malaria suppressive drugs and schedules and pediatric dosage, physicians are referred to two recent manuals on infectious diseases.

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Tetanus Prevention

The most readily prevented of diseases still takes its toll in the United States, even in California. Three hundred fifty-two cases of tetanus were reported in 1968-69 to the National Center for Disease Control; 30 were in California; the case fatality rate remains at about 60 percent, nearly the same as in 1950. In part, this continuing high fatality rate is caused by the increasing preponderance of older people (presumably unimmunized) among the infected. Tetanus occurred five times as frequently among persons past age fifty as among younger people, and these older patients have less probability of survival.

Several recent reports have added to our assurance of the adequacy of the immunity established by three aluminum-adsorbed toxoid injections with an interval of more than four weeks between the first and second and of more than a year between the second and third. A protective level of over 0.01 unit of antitoxin per ml of blood will be maintained for at least ten years, and a single additional injection will promptly boost the antibody level for a prolonged period.

Evidence has been presented that excessively frequent recall injections may cause hypersensitivity to the toxoid. Additional documentation of the needlessness of frequent recall injections has recently appeared, and has evoked editorial comment in favor of sparing use of emergency boosters.

Several observers have proposed that, after a basic immunization, it is sufficient to administer recall injections every ten years. This would continuously maintain a protective antibody level which would obviate the necessity for emergency boosters.

Such a plan would require an accurate, reliable immunization record for each individual, readily accessible for the guidance of physicians in emergencies. Lacking such information, the physician must treat each person with a tetanus-prone wound as if he had not been immunized. A dose of 250 units of tetanus immune globulin (TIG) (human) will immediately provide a protective level of antitoxin in most patients; unusually large persons need more. A larger dose of TIG may interfere with the effectiveness of toxoid given simultaneously. Active immunization with aluminum adsorbed toxoid can be started immediately. (The injection should be in a site different from the TIG.) (This will afford continuing protection after the passive immunization has deteriorated.

Every physician should assure himself that every patient has basic tetanus immunization and renewal every ten years. Special attention should be given to older patients. When the physician has reliable knowledge of continuous protection, he can stop emergency boosters except for those patients with wounds such as those of a farmer ground up by a disc plow in a manured field. The Public Health Service Advisory Committee on Immunization Practices now recommends a recall injection of toxoid, if five years have elapsed since the last dose, for all but minor, clean wounds. For such minor wounds, a recall injection is not recommended before ten years. This is a significant change from the 1969 recommendation.

Diphtheria immunization should generally be given concurrently with tetanus immunization.

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